UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

4117

FERNALD
LOG C-0616

2002 FEB -4 A 8:53

FILE: 6446.6C1F

JAN 31 2002

REPLY TO THE ATTENTION OF: SRF-5J

Mr. Johnny W. Reising
United States Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

RE: Restored Areas Consolidated
Monitoring Report Year 2001

Dear Mr. Reising:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the United States Department of Energy's (U.S. DOE) draft 2001 consolidated monitoring report for restored areas at the site.

The report addresses implementation-phase monitoring for the Area 1, Phase 1 wetland mitigation project and Area 8, Phase 2 forest demonstration project.

Overall, U.S. EPA found the document technically adequate for promoting successful revegetation and evaluation at the proposed sites. However, U.S. EPA has attached revisions that should be incorporated into the final consolidated monitoring report.

Please contact me at (312) 886-0992 if you have any questions regarding this matter.

Sincerely,

James A. Saric
Remedial Project Manager
Federal Facilities Section
SFD Remedial Response Branch #2

Enclosure

cc: Tom Schneider, OEPA-SWDO
Kim Chaney, U.S. DOE-HDQ
John Bradburne, Fluor Fernald
Terry Hagen, Fluor Fernald
Tim Poff, Fluor Fernald

1

TECHNICAL REVIEW COMMENTS ON THE DRAFT "2001 CONSOLIDATED MONITORING REPORT FOR RESTORED AREAS AT FERNALD ENVIRONMENTAL MANAGEMENT PROJECT"

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

GENERAL COMMENTS

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Not applicable (NA) Page #: NA Line #: NA
Original General Comment #: 1
Comment: The document should be revised to provide a brief summary of monitoring results and findings for previous years.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: NA Page #: NA Line #: NA
Original General Comment #: 2
Comment: The document should be revised to more clearly discuss unexpected results and potential corrective actions. For example, the document indicates that Basin 5 has the lowest plant survival rate and acts as a sediment trap for road runoff (acts as a mud flat) and that Basin 8 does not contain any areas favorable to wetland plant species. These two basins do not appear to be meeting the expected restoration goals and results. The document should either more clearly present proposed corrective actions or be revised to alter restoration functions and goals for when unexpected results are obtained.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: NA Page #: NA Line #: NA
Original General Comment #: 3
Comment: Several tables include information such as "Patches" or "Addresses." The document should include figures indicating where the patches and addresses are located. In addition, several tables list a value for "Cover Classes" and include an asterisk, but the classes and asterisks are not explained in footnotes to the tables. The document should be revised to address these issues.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: NA Page #: NA Line #: NA
Original General Comment #: 4
Comment: The document includes Tables C-1, C-2, C-3, C-4, and C-5, which show project area species lists. These tables do not separate woody from herbaceous species; however, the "Baseline Ecological Monitoring Interim Data Summary," (Table 3-1) separates information into a herbaceous data table and a woody data table. Tables C-1 through C-5 should present information in a manner similar to Table 3-1.

2

SPECIFIC COMMENTS

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.1.1.2 Page #: 2-2 Lines #: 15 through 20
Original Specific Comment #: 1
Comment: The text indicates that randomized quadrats will be used to determine basin-specific cover estimates and refers to Appendix E, "Ecological Restoration Functional Phase Monitoring Plan," and Figure 2-1. Appendix E discusses the use of quadrats along transects placed longitudinally through the study area, and Figure 2-1 shows quadrat locations and soil sampling locations. The text fails to discuss quadrat transect placement or locations, and Figure 2-1 does not show these transects. The text should be revised to discuss transect locations and placement rationale. In addition, a figure should be included that depicts the transects.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.1.3 Page #: 2-8 Lines #: 1 through 14
Original Specific Comment #: 2
Comment: The text indicates that Spring 2002 replanting will be limited to portions of Basins 2, 4, and 7 because these areas have a low percentage of native cover and contain areas not previously planted with wetland plugs. The text refers to Table 2-7 and Figure 2-1. The text, table, and figure lack specific information regarding these portions of the basins and the proposed plantings. The table simply lists the total number of plugs for each species, and the figure fails to indicate which portions of the basins will be replanted. The text, table, and figure should be revised to provide a more specific breakdown of which species will be planted, where, and the rationale behind each planting.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.1.3 Page #: 2-8 Lines #: 11 and 12
Original Specific Comment #: 3
Comment: The text indicates that Basin 8 "does not contain any areas that are favorable for wetland species" and that "surface water runoff in this basin is faster than was planned; therefore soils are too well drained." These statements are confusing and appear to be inaccurate. If runoff in the basin is faster than planned, the soils may be poorly drained rather than well drained. (Clay soils are often characterized by high runoff rates.) The mitigation plan indicates that a clay liner is present beneath Basin 8, and Table 2-5 indicates that a soil sample collected from Basin 8 had a clay texture. The text should be revised to clearly explain why Basin 8 lacks the hydrological characteristics needed to support a wetland. In addition, the text should more clearly propose a strategy to address the Basin 8 hydrologic and vegetative shortcomings.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.1.3 Page #: 2-8 Lines #: 21 through 25
Original Specific Comment #: 4
Comment: The text indicates that the radium hot-spot area was seeded and inoculated with donor soil and clumps of bur reed but that large portions remain sparsely vegetated. The text also indicates that a planting strategy has been developed to expand the vegetation coverage and that this area will be developed as a plant source for future restoration projects. The text fails to explain the cause of the sparse vegetation (such as poor soil, poor seedstock or plant material, or absence of necessary hydrological conditions). The replanting strategy should address expected causes of vegetative mortality and incorporate schemes to counter these causes. The text should be revised to provide additional detail regarding this issue.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.2.1.2 Page #: 2-11 Lines #: 15 and 16
Original Specific Comment #: 5
Comment: The text indicates that the cover estimates were calculated based on the results of the functional-phase monitoring discussed in Appendix E. The text fails to discuss transect placement or location, and transects are not shown in any figures. The text should be revised to discuss transect location and placement rationale. In addition, a figure should be included that depicts the transects.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.2.2.2 Page #: 2-12 Line #: 21
Original Specific Comment #: 6
Comment: The text reads, "Cover class 5 represents a percent cover of 75 of 100 percent." The text should be revised to read "75 to 100 percent."

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.2.3 Page #: 2-14 Lines #: 14 and 16
Original Specific Comment #: 7
Comment: The text indicates that the planting of shrubs will aid in keeping the density of tree species low in the savanna area. The text refers to the replant table, which lists, among other shrubs, smooth sumac (*Rhus glabra*) and black raspberry (*Rubus occidentalis*). Both species can form large, uniform colonies. The text should briefly describe if any measures will be taken to limit various species from becoming overly aggressive.

Commenting Organization: U.S. EPA Commentor: Saric
Figure #: 2-2 Page #: NA Line #: NA
Original Specific Comment #: 8
Comment: This figure shows the wetland mitigation project replant strategy. However, it is unclear if the area shown in the figure is the radium hot-spot area mentioned on

Page 2-8. The figure should be revised to indicate which area it shows and to provide a more detailed legend.

Commenting Organization: U.S. EPA Commentor: Saric
Appendix #: E Page #: E-2 Lines #: 19 and 20
Original Specific Comment #: 9
Comment: The text indicates that a permanent transect approximating the study area's longitudinal axis should be established to locate sampling quadrats. The text fails to discuss how features such as topography and water bodies may affect transect locations. The text should be revised to discuss this issue.

Commenting Organization: U.S. EPA Commentor: Saric
Appendix #: E Page #: E-3 Lines #: 24 and 25
Original Specific Comment #: 10
Comment: The text indicates that care should be taken not to trample herbaceous vegetation when establishing quadrats and sampling woody vegetation. To minimize potential herbaceous vegetation trampling, the herbaceous vegetation should be sampled immediately after the woody vegetation quadrat is established.

Commenting Organization: U.S. EPA Commentor: Saric
Appendix #: E Page #: E-6 Lines #: 17 through 20
Original Specific Comment #: 11
Comment: The text indicates the formula for calculating the floristic quality assessment index (FQAI). This calculation typically involves multiplying the mean coefficient of conservatism by the square root of the total number of species. In the formula (FQAI = C n), n should be replaced with the square root of n , where n is the total number of species recorded. The text should be revised to reflect this change. In addition, Swink and Whilhelm *(Plants of the Chicago Region*, 1994) entirely exclude introduced species from the floristic quality assessment based on the rationale that the presence and proportion of conservative native species define the natural area and not necessarily the presence or abundance of weeds. Although introduced species should be excluded from the floristic quality assessment, this change would apparently not significantly change the FQAI values presented.

5